

# PATENT ABSTRACTS OF JAPAN

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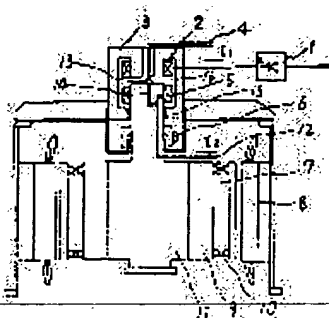
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## (54) SYNCHRONOUS MACHINE



### (57)Abstract:

**PURPOSE:** To improve maintainability and controllability, by employing superconducting field winding in a synchronous machine and feeding current through a rotary transformer therefor.

**CONSTITUTION:** A rotor having a magnetic pole 7 is provided inside of the stator 8 of generator, and a yoke 9 is provided on the outer circumference of a shaft 11. A field winding 10 composed of wound hollow superconductor internally cooled with liquid nitrogen is fixed to the pole 7. The field winding 10 is coupled through a superconducting lead 12 with a superconducting rotor side transformer coil 5, and a core 3 is arranged at the stator side while facing a stator transformer coil 2 so as to form a magnetic path. The coil 2 is coupled with a static exciter 1. Consequently, stator side current is not required to be coupled with rotor side current

through a brush or the like, and current in the field winding 10 can be controlled through coupling of flux of superconducting coil.

## LEGAL STATUS

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